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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,721	11/30/2000	Kazuhiro Nakamigawa	14118	1909

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT PAPER NUMBER

2674

DATE MAILED: 03/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/726,721

Applicant(s)

KAZUHIRO NAKAMIGAWA

Examiner

Abbas I Abdulsalam

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2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections 35 U.S.C. 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takita et al. (USPN 6151005) in view of Hayashi et al. (USPN 5541619).

Regarding claims 1 and 6, Takita teaches driving a liquid crystal panel in which an input and an output are configured with a buffer and correction circuits. Takita teaches a group of inverter circuits (3806) for inverting a display data, the inverted data generated (3807), a voltage selector (3712), selector elements (3804), switching elements (SWL), and a voltage divider circuit, which is supplied, with the output signal of the gate circuit. Takita also teaches that the voltage divider circuit that selects and delivers the voltage and the gate circuit that corrects a signal corresponding to the display data. See col. 2, lines 12-21 and Fig 38. In addition, Takita teaches a selection of power source voltage, V_{cc} & V_{ss} , by switching a selecting element. (4104). See col. 42, lines 39-49, Fig 41, and Fig 42. However, Takita does not teach the use of an inverter for inverting the digital image input signal. Hayashi on the other hand teaches the signal generation means including alternating inverted signal outputting means for outputting an alternating inverted signal whose polarity is inverted every other frame. See col. 6, lines 41-44. Specifically, Hayashi discloses a display system including an alternative inverted signal

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generation circuit (5) as well as the structure of the inverted signals with respect to the input mechanism. See Fig 5 & 6.

Therefore, it would have been obvious to one having a skill in the art at the time the invention was made to modify Takita's liquid crystal display system to include Hayashi's inverted signal generation means. One would have been motivated in view of the suggestion in Hayashi that the inverted signal generation technique as shown in Fig 4 & 5 functionally performs the same as the desired inverter. The use of alternating inverted signal generation technique helps function liquid crystal display system as taught by Hayashi.

Hayashi in conjunction with alternating inverted signal generating circuit (5) teaches the use of polarity correction circuit (9), liquid crystal driving voltage generating circuit (4) and a liquid crystal display element (1) as shown in Fig 4.

Regarding claim 2, Takita teaches a color display panel (4108) in conjunction with alternating driving of the LCD panel. See col. 42, lines 25-28 and 39-51.

Regarding claim 3, Takita teaches thin film transistors (TF1, TF2) with respect to a liquid crystal layer, LC and also teaches an application of electric field. See Fig 45.

Regarding claim 4, Takita teaches a switching element (SWLO, to SWL3 and SWR0 to SWR3). Takita teaches a switching element in terms of an operating voltage width equal to the width of the power source voltage. See col. 2, lines 15-21, col. 6, lines 34-38 and Fig 38.

Regarding claim 5, Takita teaches X driver circuit (2401) of the LCD driving the active matrix LCD panel (1012) including an array of pixels whose opposite positions form color filters by iteration of Red, Green and Blue. See col. 32, lines 48-53 and col. 48, lines 34-42.

Conclusion

2. The prior art made of record and not relied upon is considered to applicant's disclosure.

The following arts are cited for further reference.

U.S. Pat. No. 6,140,989 to Kato.

U.S. Pat. No. 6,166,725 to Isami et al.

U.S. Pat. No. 5,923,546 to Shimada et al.

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3. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

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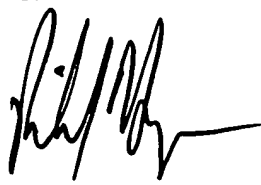
Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand delivered responses should be brought to Crystal Park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.


RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Abbas Abdulsalam

Examiner

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